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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/180,209	12/22/1999	MIHAIL N. KARPUSAS	B189	6529

7590

08/21/2002

MARGARET A. PIERRI
FISH & NEAVE
1251 AVENUE OF THE AMERICAS
NEW YORK, NY 10020

EXAMINER

MORAN, MARJORIE A

ART UNIT

PAPER NUMBER

1631

DATE MAILED: 08/21/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/180,209

Applicant(s)

KARPUSAS ET AL.

Examiner

Majorie A. Moran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05/29/02.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39,42 and 43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 39,42 and 43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 30.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action. All rejections and objections not reiterated below are hereby withdrawn. Claims 39 and 42-43 are pending.

Claim Rejections - 35 USC § 101

Amended claims 39 and 42-43 recite computers comprising a computer readable medium and a computer screen. As a computer comprising a computer screen is an "object made by man", the claims are now directed to statutory subject matter, and the rejection of claims 39 and 42 is hereby withdrawn. In the arguments with regard to rejections made under 35 USC 101, applicant argues that the structure coordinates recited in the claims enter into a functional relationship with the computer because the computer produces a 3D representation of a CD40L binding site. In response, applicant is reminded that the claims are directed to a *product*, not a method, and do not recite any STEP of producing a 3D representation of any molecule. Each of claims 39 and 42-43 recite a preamble directed to a computer "for producing" a 3D representation of a molecule, which merely limits the computer to be capable of producing a 3D representation of a compound or molecule, but is not a limitation that such a representation IS actually produced. The structure coordinates are merely data, which may be stored on any type of computer readable medium, and are not changed by the structure in or on which they are stored; i.e. the data does not undergo any transformation as a result of an interaction WITH the computer. Although the computer is limited to comprise a (potential) capability for displaying the data in a particular

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format, this is not a limitation for actual display of data in that format. For these reasons, the examiner maintains that the structural coordinates are nonfunctional descriptive material and do not distinguish the invention in terms of patentability. As set forth above, the claims recite statutory subject matter as they are directed to an article of manufacture (i.e. a computer comprising a computer screen), not because they recite an interfunctional relationship between the computer and data stored therein.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 39 and 42-43 are rejected under 35 U.S.C. 102(b) as being anticipated by STALEY (Comp. Usage Mater. Educ. Proc. Symp. (1985), pp. 113-122, abstract only).

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STALEY teaches a computer with a memory and color monitor (display screen), wherein the computer is capable of displaying a 3D representation of a molecule using crystallographic coordinates, thereby anticipating claims 39 and 42-43. It is noted that where a claim recites nonfunctional descriptive material which is not functionally related to the substrate on which it is stored, the nonfunctional descriptive material is considered, but is not entitled to patentable weight; i.e. as the structure coordinates do not functionally interact with the computer claimed, they are nonfunctional descriptive material, as previously set forth and reiterated above, and therefore do not distinguish the claimed invention from the prior art of STALEY. For support, see in re Gulack (CAFC) 217 USPQ at 404.

Claims 39 and 42-43 are rejected under 35 U.S.C. 102(e) as being anticipated by OSSLUND (US 5581476, filed 1/28/1993).

OSSLUND teaches a Silicon Graphics 320 VGX computer comprising a display screen, wherein the computer is capable of displaying a 3D representation of a molecule using crystallographic coordinates (col. 6, lines 32-66), thereby anticipating claims 39 and 42-43. It is noted that where a claim recites nonfunctional descriptive material which is not functionally related to the substrate on which it is stored, the nonfunctional descriptive material is considered, but is not entitled to patentable weight; i.e. as the structure coordinates do not functionally interact with the computer claimed, they are nonfunctional descriptive material, as previously set forth and reiterated above,

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and therefore do not distinguish the claimed invention from the prior art of OSSLUND.

For support, see in re Gulack (CAFC) 217 USPQ at 404.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 39 and 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over STALEY (Comp. Usage Mater. Educ. Proc. Symp. (1985), pp. 113-122, abstract only) in view of PIETSCH et al. (International Immunity (1993) vol. 5 (2), pp. 233-238).

The claims recite computers for 3D display of a molecule, wherein the computers comprise a computer readable medium and a computer screen. Claim 39 further limits the computer readable medium to comprise data for structure coordinates

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of CD40 ligand (CD40L) amino acids 143, 203, 207, and 145. Claim 42 limits the computer readable medium to comprise data for structure coordinates for CD40L amino acids according to Table 1. Claim 43 limits the computer readable medium to comprise data for structure coordinates of CD40L amino acids 127-131, 135, 136, 141-146, 178, 180, 185-188, 190-192, 197-204, 207, 209, 211, 217-220, 230-232, 240-243, 245, 247-253.

STALEY teaches a computer for 3D display of crystal structures, comprising a memory (computer readable medium) and a monitor (screen), as set forth above. STALEY does not teach that his memory comprises the coordinates recited in the claims.

PEITSCH teaches display of a 3D representation of CD40L, wherein amino acids used for the representation comprise those from residues 115-260 (p. 234, Fig. 2). PEITSCH further teaches that coordinates of a CD40L monomer structure were known and had been deposited with the Brookhaven Database (p. 236).

It would have been obvious to one of ordinary skill in the art at the time of invention to have included structure coordinates for residues 115-260 of CD40L in the computer readable medium in the computer of STALEY where the motivation would have been to use the computer and program of STALEY to project a 3D representation of a putative receptor binding site of CD40L, as suggested by the tertiary structures and 3D alignments taught by PEITSCH (Fig's 2, 4 and 5). One skilled in the art would reasonably have expected success in including structure coordinates for CD40L in the computer readable medium and computer of SATLEY because PEITSCH teaches that

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structure coordinates for CD40L were known and could be used for 3D representation of at least a portion of CD40L, and STALEY teaches that his computer could be used to visualize and display 3D representations of crystallized molecules.

Conclusion

Claims 39 and 42-43 are rejected.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

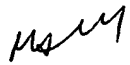
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marjorie A. Moran whose telephone number is (703)

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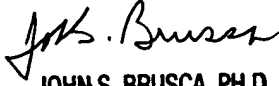
305-2363. The examiner can normally be reached on Monday to Friday, 7:30 am to 4 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward can be reached on (703) 308-4028. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to a patent analyst, Tina Plunkett, whose telephone number is (703) 305-3524.


Marjorie A. Moran
Examiner
Art Unit 1631

August 17, 2002


JOHN S. BRUSCA, PH.D
PRIMARY EXAMINER